1 A method for creating virtual private connections 2 between end points in a shared storage area network (SAN), 3 the steps comprising:

- a) providing a virtual connection architecture and a host initiator operatively connected thereto, said host initiator generating and transmitting I/O commands to said virtual connection architecture;
- b) comparing source and destination information from said I/O commands to a predetermined list of allowable connections; and
- c) when said source and destination information matches said predetermined list of allowable connections, creating a data connection between said host initiator and a storage device, or a logical portion thereof, operatively connected to said virtual connection architecture, thereby establishing a virtual private SAN.
- 2. The method for creating virtual private connections between end points in a shared SAN as recited in claim 1, wherein multiple virtual private SANs function independently and substantially simultaneously within said shared SAN.

- 3. The method for creating virtual private connections between end points in a shared SAN as recited in claim 2, wherein multiple host initiators share a common physical data channel.
 - 4. The method for creating virtual private connections between end points in a shared SAN as recited in claim 2, wherein said multiple host initiators are provided a protected end-to-end data path.
 - 5. The method for creating virtual private connections between end points in a shared SAN as recited in claim 2, wherein said multiple, virtual private SANs support at least one SAN productivity product from the group: hubs, switches, gateways and routers.
 - 6. The method for creating virtual private connections between end points in a shared SAN as recited in claim 2, wherein said comparing step (b) comprises determining a level of access permission for said host initiator.

- 7. The method for creating virtual private connections
 between end points in a shared SAN as recited in claim 6,
 the steps further comprising:
- d) storing information representative of at least one of said allowable connections.
 - 8. The method for creating virtual private connections between end points in a shared SAN as recited in claim 7, wherein said storing step (d) comprises storing said information in a virtual connection cache.
 - 9. The method for creating virtual private connections between end points in a shared SAN as recited in claim 8, the steps further comprising
 - e) using said stored virtual connection information to validate subsequent requests for access from said host initiator.
 - 10. The method for creating virtual private connections between end points in a shared SAN as recited in claim 8, wherein said virtual connection architecture comprises a virtual connection manager.

- 1 11. The method for creating virtual private
 2 connections between end points in a shared SAN as recited in
 3 claim 2, wherein said multiple virtual private SANs are
 4 operable within a existing SAN without need for additional
 5 software, middleware, drivers, or modifications to an
 6 existing operating system.
 - 12. The method for creating virtual private connections between end points in a shared SAN as recited in claim 2, wherein said connections are fully secured independently of the security of each individual host.
 - 13. The method for creating virtual private connections between end points in a shared SAN as recited in claim 2, wherein said multiple virtual private SANs operate independently of attached storage devices.
 - 14. The method for creating virtual private connections between end points in a shared SAN as recited in claim 13, wherein said attached storage devices comprise any mixture of legacy or new technology storage devices.

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- 1 15. The method for creating virtual private connections 2 between end points in a shared SAN as recited in claim 2, 3 wherein said multiple virtual private SANs operates 4 independently of connection interfaces and provide support 5 for at least one from the group of interfaces: Fibre 6 Channel, SCSI, other SAN interfaces.
 - 16. The method for creating virtual private connections between end points in a shared SAN as recited in claim 2, wherein said at least one initiator host comprises a host initiator interface for providing a connection to said virtual connection architecture.
 - 17. The method for creating virtual private connections between end points in a shared SAN as recited in claim 6, the steps further comprising:
 - d) providing a registration engine for receiving a registration command from said host initiator.
 - 18. The method for creating virtual private connections between end points in a shared SAN as recited in claim 17, wherein said registration command comprises at least one of the commands from the group: full registration, periodic registration, and de-registration commands.

1	19. The method for creating virtual private connections
2	between end points in a shared SAN as recited in claim 18,
3	wherein said registration engines comprises a host
4	registration service oberating on said host initiator.

- 20. The method for creating virtual private connections between end points in a shared SAN as recited in claim 18, wherein said registration commands comprise host and initiator specific information for facilitating automatic identification and configuration of said host and interface.
- 21. The method for creating virtual private connections between end points in a shared SAN as recited in claim 17, the steps further comprising:
 - e) periodically monitoring the health status of said host initiator.
- 22. The method for creating virtual private connections between end points in a shared SAN as recited in claim 21, comprising the issuance of a periodic registration command.

- 23. The method for creating virtual private connections between end points in a shared SAN as recited in claim 8, the steps further comprising:
 - e) automatically capturing an existing SAN configuration and using said captured configuration information to automatically establish persistent access controls.

